

102  
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Hurdling  
How?  
9. An electroactive device providing large mechanical output displacements, comprising:

a layered structure having a prestressing layer and a piezoelectric layer, the prestressing layer being in tension, the prestressing layer imparting a prestress on the piezoelectric layer such that the piezoelectric layer is in compression.

103 (9)  
10. The device of claim 9, wherein the prestressing layer includes reinforcing material.

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11. The device of claim 9, wherein the piezoelectric layer includes surface electrodes.

12. The device of claim 9, further comprising:  
an electrode layer placed between the prestressing layer and the piezoelectric layer; and  
an electrode layer placed on top of the piezoelectric layer.

(10) 13. The device of claim 9, wherein the prestressing layer is an adhesive.

(9) 14. The device of claim 9, where the piezoelectric layer is a ferroelectric material.

(9) 15. The device of claim 9, wherein the piezoelectric layer is a piezorestrictive material.

(10) 16. The device of claim 13, wherein the adhesive is a polyimide.

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or  
Separate  
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A electroactive device providing large mechanical output displacements, comprising:

a layered structure having a prestressing layer having a convex surface and a piezoelectric layer having a concave surface, the convex surface of the prestressing layer being bonded onto the concave surface of the piezoelectric layer such that the prestressing layer is in tension and the piezoelectric layer is in compression.

18. The device of claim 17, wherein the prestressing layer includes reinforcing material.
19. The device of claim 17, wherein the piezoelectric layer includes surface electrodes.
20. The device of claim 17, further comprising:  
an electrode layer placed between the prestressing layer and the piezoelectric layer; and  
an electrode layer placed on top of the piezoelectric layer.
21. The device of claim 17, wherein the prestressing layer is an adhesive.
22. The device of claim 17, where the piezoelectric layer is a ferroelectric material.
23. The device of claim 17, wherein the piezoelectric layer is a piezorestrictive material.
24. The device of claim 21, wherein the adhesive is a polyimide.